UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,507	07/28/2003	Han-Wen Hsu	MTKP0056USA	1506

27765 7590 10/01/2007

NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION
P.O. BOX 506
MERRIFIELD, VA 22116

EXAMINER	
GUPTA, PARUL H	

ART UNIT	PAPER NUMBER
2627	

NOTIFICATION DATE	DELIVERY MODE
10/01/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

winstonhsu.uspto@gmail.com
Patent.admin.uspto.Rcv@naipo.com
mis.ap.uspto@naipo.com.tw

Office Action Summary	Application No.	Applicant(s)	
	10/604,507	HSU ET AL.	
	Examiner	Art Unit	
	Parul Gupta	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 July 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25 and 31-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *15-17 and 31-36* is/are allowed.

6)☒ Claim(s) *1-14 and 18-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-25 and 31-36 are pending for examination as interpreted by the examiner. The arguments and amendment filed 7/18/07 were considered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 5-7, 9, 13-14, 18, 20, and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ota et al., US Patent Publication 2003/0099174 in view of Koishi et al., US Patent 4,701,609.

Regarding claim 1, Ota et al. teaches in figure 12 a multi-pulse peak-hold device utilized to acquire an optical output power level of a laser diode in an optical recording apparatus, the optical recording apparatus having a photodiode (17) for generating a sensed power level signal according to the optical output of the laser diode, the multi-pulse peak-hold device comprising: a peak-hold circuit (5) comprising a first input for receiving and holding (paragraph 0051) the sensed power level signal and an output for a peak voltage signal; and a sample and hold circuit (65) comprising a first input for receiving the peak voltage signal, a second input for receiving a sample and hold signal (67), and an output for a held power level signal utilized by the optical recording apparatus to adjust the optical output power of the laser diode; wherein after a predetermined time period, the optical recording apparatus issues the sample and hold

signal causing the sample and hold circuit to sample and hold the peak voltage signal; and an output signal from the sample and hold circuit is adjusted by multiplying the output signal from the sample and hold circuit with a proportional constant (paragraph 0050 discusses doing this using the transfer function of the operational amplifier of element 66) to generate a multiplied output signal (output of the operational amplifier of element 66), the proportional constant obtained according to an identification procedure (the values of the elements of transfer function given in paragraph 0050 are set in the initial identification procedure), wherein the proportional constant is obtained independently of the multiplied output signal (the values of the transfer function of the operational amplifier are independent of the output). Ota et al. does not but Koishi et al. teaches a second input for receiving a reset signal and the optical recording apparatus issues the reset signal to reinitialize the peak-hold circuit (column 4, lines 58-66). Column 5, lines 23-28 also teach that the holding state of the peak-hold circuit is released, which is the same thing as resetting the peak-hold circuit. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of resetting the peak-hold circuit as taught by Koishi et al. into the system of Ota et al. The motivation would be to easily switch from the recording mode to the reproduction mode (column 4, lines 58-63 of Koishi et al.).

Regarding claim 5, Ota et al. teaches the multi-pulse peak-hold device in figure 12 of claim 1 wherein the peak-hold circuit (5) acquires and outputs a maximum peak voltage occurring in the sensed power level signal within the predetermined time period.

Regarding claim 6, Ota et al. teaches the multi-pulse peak-hold device in figure 12 of claim 1 wherein the peak-hold circuit (6) acquires and outputs a minimum bottom voltage occurring in the sensed power level signal within the predetermined time period.

Regarding claim 7, Ota et al. teaches in figure 1 an optical recording apparatus having automatic power control for adjusting an optical output power level of a laser diode in the optical recording apparatus, the optical recording apparatus comprising: a control circuit (3); a photodiode comprising an output for outputting an optical power level signal (17); a peak-hold circuit comprising an output for holding (paragraph 0051) and outputting a peak voltage signal (5), a first input electrically connected to the output of the photodiode (through 18); a sample and hold circuit comprising an output (65), a first input electrically connected to the output of the peak-hold circuit, and a second input electrically connected to the control circuit for receiving a sample and hold signal (67); a reference power level setting unit comprising an output for outputting a reference power level signal (inputted to element 7 as explained in paragraph 0034); a feedback controller unit comprising an input and an output, the input of the feedback controller unit receiving a difference between the output of the sample and hold circuit and the reference power level signal (function performed by element 7); a laser diode driving unit (function performed by element 7) comprising an input electrically connected to the output of the feedback controller unit and an output electrically connected to the laser diode; and a laser diode (16) for radiating laser light onto an optical disc; wherein after a predetermined time period, the control circuit transmits the sample and hold signal

causing the sample and hold circuit to sample and hold the peak signal; and an output signal from the sample and hold circuit is adjusted by multiplying the output signal from the sample and hold circuit is adjusted by multiplying the output signal from the sample and hold circuit with a proportional constant (paragraph 0050 discusses doing this using the transfer function of the operational amplifier of element 66) to generate a multiplied output signal (output of the operational amplifier of element 66), the proportional constant obtained according to an identification procedure (the values of the elements of transfer function given in paragraph 0050 are set in the initial identification procedure), wherein the proportional constant is obtained independently of the multiplied output signal (the values of the transfer function of the operational amplifier are independent of the output). Ota et al. does not but Koishi et al. teaches a second input for receiving a reset signal and the control circuit then transmits the reset signal to reinitialize the peak-hold circuit (column 4, lines 58-66). Column 5, lines 23-28 also teach that the holding state of the peak-hold circuit is released, which is the same thing as resetting the peak-hold circuit. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of resetting the peak-hold circuit as taught by Koishi et al. into the system of Ota et al. The motivation would be to easily switch from the recording mode to the reproduction mode (column 4, lines 58-63 of Koishi et al.).

Regarding claim 9, Ota et al. teaches the optical recording apparatus in figure 1 of claim 7 further comprising a feed-forward path electrically connected between the

reference power level setting unit and the feedback controller unit for speeding up transient response from read status to write status in an APC loop (accomplished via loop around element 18, 7, and 23).

Regarding claim 13, Ota et al. teaches the optical recording apparatus in figure 1 of claim 7 wherein the peak-hold circuit (5) acquires and outputs a maximum peak voltage occurring in the optical power level signal within the predetermined time period.

Regarding claim 14, Ota et al. teaches the optical recording apparatus in figure 1 of claim 7 wherein the peak-hold circuit (6) acquires and outputs a minimum bottom voltage occurring in the optical power level signal within the predetermined time period.

Regarding claim 18, Ota et al. teaches a method for measuring an optical output power level of a laser diode in an optical recording apparatus (given generally in paragraph 0006), the method comprising: utilizing a photodiode to generate a sensed power level signal according to the optical output of the laser diode (specifically mentioned in paragraph 0034, but also used in second embodiment as recited in paragraph 0050); utilizing a peak-hold circuit to acquire, and output a maximum voltage of the sensed power level signal (paragraph 0051); utilizing a sample and hold circuit to sample and hold the output of the peak-hold circuit after a predetermined time period according to a signal received by the sample and hold circuit from the optical recording apparatus (paragraph 0051); and adjusting an output signal from the sample and hold circuit by multiplying the output signal from the sample and hold circuit with a proportional constant (paragraph 0050 discusses doing this using the transfer function

of the operational amplifier of element 66) to generate a multiplied output signal (output of the operational amplifier of element 66), the proportional constant obtained according to an identification procedure (the values of the elements of transfer function given in paragraph 0050 are set in the initial identification procedure), wherein the proportional constant is obtained independently of the multiplied output signal (the values of the transfer function of the operational amplifier are independent of the output). Ota et al. does not but Koishi et al. teaches a peak-hold circuit used to hold the maximum voltage (column 3, lines 62-66) and reinitializing the peak-hold circuit after the output of the peak-hold circuit has been sampled and held by the sample and hold circuit (column 4, lines 58-66). Column 5, lines 23-28 also teach that the holding state of the peak-hold circuit is released, which is the same thing as resetting the peak-hold circuit. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of resetting the peak-hold circuit as taught by Koishi et al. into the system of Ota et al. The motivation would be to easily switch from the recording mode to the reproduction mode (column 4, lines 58-63 of Koishi et al.).

Regarding claim 20, Ota et al. teaches the method of claim 18 further comprising speeding up the transient response from read status to write status in an APC loop by a feed-forward path from a reference power level setting unit to a feedback controller unit (accomplished via loop around element 18, 7, and 23 of figure 1 as explained in paragraph 0034, but also used in second embodiment as recited in paragraph 0050).

Regarding claim 24, Ota et al. teaches in paragraph 0051 the method of claim 18 wherein the peak-hold circuit acquires and outputs a maximum peak voltage occurring in the sensed power level signal within the predetermined time period.

Regarding claim 25, Ota et al. teaches in paragraph 0051 the method of claim 18 wherein the peak-hold circuit acquires and outputs a minimum bottom voltage occurring in the sensed power level signal within the predetermined time period.

3. Claims 2-4, 10-12, and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ota et al. in view of Koishi et al., further in view of Shiozaki et al., US Patent 6,990,050.

Ota et al. in view of Koishi et al. teaches the limitations of claims 1, 7 and 18 but fails to teach the further limitations of the given window signal of of claims 2, 10, and 21.

Regarding claim 2, Shiozaki et al. teaches the multi-pulse peak-hold device of claim 1 further comprising a switch (function performed by element 4 of figure 1) to control transmission of the sensed power level signal from the photodiode to the peak-hold circuit according to a window signal ("predetermined time interval" given in column 4, lines 57-58) issued by the optical recording apparatus.

Regarding claim 3, Shiozaki et al. teaches in figure 1 the multi-pulse peak-hold device of claim 2 wherein the window signal is issued by the optical recording apparatus to randomly select FPDO sequences from the FPDO pulses train. As the given device is only sampling in response to the given control signal and is not sampling continuously, the apparatus must be randomly selecting sequences from the given pulses train.

Regarding claim 4, Shiozaki et al. teaches in figure 1 the multi-pulse peak-hold device of claim 2 wherein the window signal is issued by the optical recording apparatus according to a predetermined FPDO sequence comprising fixed data patterns (purpose served by timing according to the EFM signal as given in column 5, lines 1-2).

Regarding claim 10, Shiozaki et al. teaches in figure 1 the optical recording apparatus of claim 7 further comprising a switch (function performed by element 4 of figure 1) electrically connected between the output of the photodiode (3) and the first input of the peak-hold circuit (elements 5 and 6) for controlling transmission of the optical power level signal from the photodiode to the peak-hold circuit according to a window signal ("predetermined time interval" given in column 4, lines 57-58) transmitted from the control circuit to the switch, wherein the optical power level signal is active to transmit from the photodiode to the peak-hold circuit within the window signal and is inactive outside the window signal.

Regarding claim 11, Shiozaki et al. teaches in figure 1 the optical recording apparatus of claim 10 wherein the window signal is transmitted to the switch only during a predetermined FPDO sequence comprising fixed recording data patterns (purpose served by timing according to the EFM signal as given in column 5, lines 1-2).

Regarding claim 12, Shiozaki et al. teaches in figure 1 the optical recording apparatus of claim 10 wherein the window signal is transmitted to the switch to select random FPDO sequences from the FPDO pulses train. As the given device is only sampling in response to the given control signal and is not sampling continuously, the apparatus must be randomly selecting sequences from the given pulses train.

Regarding claim 21, Shiozaki et al. teaches in column 4, line 47 - column 5, line 11 the method of claim 18 further comprising controlling transmission of the sensed power level signal from the photodiode to the peak-hold circuit with a switch according to a window signal ("predetermined time interval" given in column 4, lines 57-58) issued by the optical recording apparatus, wherein the sensed power level signal is active to transmit from the photodiode to the peak-hold circuit within the window signal and is inactive outside the window signal.

Regarding claim 22, Shiozaki et al. teaches in column 4, line 47 - column 5, line 11 the method of claim 21 further comprising transmitting the window signal from the optical recording apparatus to the switch to select a random FPDO sequence from a FPDO pulse train. As the given device is only sampling in response to the given control signal and is not sampling continuously, the apparatus must be randomly selecting sequences from the given pulses train.

Regarding claim 23, Shiozaki et al. teaches in column 4, line 47 - column 5, line 11 the method of claim 21 further comprising transmitting the window signal from the optical recording apparatus to the switch during a predetermined FPDO sequence comprising fixed recording data patterns (purpose served by timing according to the EFM signal as given in column 5, lines 1-2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of controlling the timing of holding the output of the photodiode as taught by Shiozaki et al. into the system of Ota et al. in view of Koishi et al. The motivation would be to have an apparatus capable of controlling the laser power

to an optimal value, and enabling a stable recording/reproducing operation to be performed, even if offset occurs in a detected level (column 2, lines 58-63 of Shiozaki et al.).

4. Claims 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ota et al. in view of Koishi et al., further in view of Eguchi et al., US Patent Publication 2002/0036961.

Ota et al. in view of Koishi et al. teaches the limitations of claims 7 and 18 but fails to teach the further limitations of claims 8 and 19.

Regarding claim 8, Eguchi et al. teaches in figure 1 the optical recording apparatus of claim 7 further comprising a low-pass filter (4) electrically connected between the output of the photodiode (2) and the first input of the peak-hold circuit (function performed by element 1) for alleviating noise effect on the output of the photodiode.

Regarding claim 19, Eguchi et al. teaches in paragraph 0044 and 0047 the method of claim 18 further comprising alleviating noise effects on the output of the photodiode utilizing a low-pass filter between the photodiode and the peak-hold circuit (function performed by sample-and-hold circuit of element 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of a low-pass filter as taught by Eguchi et al. into the system of Ota et al. in view of Koishi et al. The motivation would be ensure the signal undergoes a smoothing process (paragraph 0047 of Eguchi et al.).

Allowable Subject Matter

5. Claims 15-17 and 31-36 are allowed over the prior art because of the references cited in the record, considered in combination or alone, fail to suggest or fairly teach the constant approximately equal to a ratio of measured power to real power used to adjust the given values of the given ratio of different powers.

Response to Arguments

6. Applicant's arguments with respect to the claimed invention have been considered, but are not persuasive.

Applicant contends that the identification procedure is different than an identification period. However, the identification procedure is not claimed and thus, the examiner interprets this to be any procedure performed during the initial state/stage of the system.

Applicant also contends that the transfer function is not independent of the output of the operational amplifier. However, the transfer function is an independent entity than the output. Thus, the two values are separate and each is obtained independently of the other.

Applicant contends that the peak detecting circuit does not hold the value. However, paragraph 0051 specifically says that the circuit holds the value.

Applicant contends that there is no reason to combine the references for claim one as there is no reason for a reset signal. However, the signal is used to easily switch from the recording mode to the reproduction mode as explained above.

Applicant contends that there is no reason to combine the references for claims 2, 10, and 21, as there is no reason for a switch. However, the switch is utilized for better control of the laser, as explained above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Templin et al., US Patent 4,228,684 teaches multiplying the output of the sample and hold circuit by a ratio of two currents.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parul Gupta whose telephone number is 571-272-5260. The examiner can normally be reached on Monday through Thursday, from 8:30 AM to 7 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PHG
9/13/07

WAYNE YOUNG
SUPERVISORY PATENT EXAMINER